

Abstract

A system for listening to AM stereo and viewing slowscan tv pictures without any special equipment needed except the standard am receives.

Using a Kahn style system to receive the am stereo via two am radios and another am radio to receive the slowscan tv pictures.

The AM stereo is 10 kc wide and on the left side of that is the sstv which is 4 kc wide making the channel width 15 kc wide.

For example if the am stereo carrier is at 700kc @ 10kc bandwidth 695kc to 705kc ,then the sstv carrier will be at 692kc @4kc bandwidth 690kc to 694kc .

The only special equipment needed then is a slow converter to receive the video.

An analog radio with digital tuning will receive the audio carrier at 700 kc in mono and the sstv at 690 kc with out interference of each other, because the phasing,de-emphasis and slight frequency difference used at the transmitter site.

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Cross Reference

PPA#60/463103 The Raven/VS(The Radio Vision Electronic Network/Viewing System)

U.S.Patent Documents

2141973	Dec 1938	Finch	
4057836	Nov 1977	Munsey	358/140
4099202	JUL 1978	Cavanaugh	358/85
4494144	Jan 1985	Brown	358/133
4688255	Aug 1987	Kahn	381/16
4849811	Jul 1989	Kleinerman	358/133
5164980	Nov 1992	Bush	379/53

Other References

Magazine article by Harry Maynard:AM Stereo its time has come;Oct 1976

TAB books:The Complete Handbook of SLOW-TV by Dave Ingram

INTERNET:Slow SCAN TV HISTORY 1970 W7FEN

Claims

1. To be able to enjoy am stereo and still life pictures(a new picture every minute) using ordinary am receiving equipment.
2. While driving will not distract driver like full motion video will.
3. Will help am radio stations hold on to its last bastion, the car radio .
4. Am music stations(a few are left)will now be able to run full motion music DVDs instead of just CDs.The scan converter will convert the video to a 3khz wide signal for am broadcast using sstv mode robot 36 .

5. Am: News;Talk,and Sports radio stations will also be able to show news stories , pictures,as well commercial video only.

BACKGROUND OF THE INVENTION

The Present invention generally pertains to using three "double sideband full carrier, transmitters" to produce am stereo and slow scan video.

The video portion differs from Mr.Kahn's were as the data is retrieved by am demodulation and not single sideband , FM,or FSK detection.

And at the same time no cross interference from the audio and video due phasing,de-emphasis, and frequency differances . Video is not embodied in the audio portion at all.

SUMMARY OF THE INVENTION

The present invention enables the audio and slow scan tv signal to be transmitted over the same 15khz wide channel on the am broadcast band :example; 690khz to 705khz in which the video carrier is at 692khz@bw of 4khz(690khz to 694khz) and the audio carrier at 700khz@bw of 10khz(695 to 705khz).*Please note 15khz wide at 700khz can also mean 692.5 to 707.5.

Using an am analog radio with analog tuner you can directly tune to 692khz or one with a digital tuner ,you can tune to 690khz for the video and the same analog radio with digital tuner will tune in the audio at 700khz without interfering with other(I used a Walkmen style RCA AM/FM stereo cassette player) also I used my Radio shack DMM set for HZ/KHZ and my Keithly digital frequency meter to check R8 in the am 1(b) transmitter.

All transmitters used are hobby broadcast quality and all are of the brand name, Ramsey . Three am receivers were used, two to receive the stereo in the same manor used for receiving Kahn am stereo system.

Now the other am receiver needs the use of a scan converter such as the Kenwood VC-H1 such as the used at the transmitter site the only difference is the vc-h1 at the transmitter site is in auto transmitte(once every 3 seconds) which is too slow for commercial broadcast use .so I built a 555 timing circuit to cause the auto mode to transmitte a new picture every minute and with live action capture built in by Keenwood, no need to stop the action or poise to send a new picture, furthermore the vch-1 at the transmitter site will not receive in auto transmitte mode therefore no video interference from outside radio stations using the same system.

BRIEF DESCRIPTION OF THE DRAWINGS AND THE PREFERRED EMBODIMENTS

Fig. 1 Block diagram of the Raven/VS broadcast system: left channel 400 ns delay line; -45° phase network;preemphasis 50 us; right channel +45° phase network;75 preemphasis. Ramsey STC-1. Ramsey AM1 oscillator disabled and Ramsey AM 25 ANT. OUT into RF of AM 1 via R9 also C7, Q6 and Q5 have been removed. A Keenwood VC-H1 inputs into a deemphasis network that inputs into the AM 1(b) and its output filter network L 10 is unchanged but C12 and C14 values have been changed from .0022 uf to .02 uf to

obtain the bandwidth of 4khz and its output is coupled to the main antenna along with the output of the stereo signal from the AM 1 transmitter.

The power does dip a bit when both transmitter systems operate the same antenna.

Fig. 2 Phase angles of the signals.

Fig. 3 Ramsey schematics of the Ramsey AM 1 and 1(b) transmitters *note an AM 1 transmitter can be use in lue of the AM 25 transmitter